

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY^{1/}

Core samples of the Green River Formation from Equity Oil Company's
Core BX-1 drilled in 1964 in SE1/4NE1/4SE1/4 sec 6, T 3 S,
R 98 W, Rio Blanco County, Colorado (1870 ft N of S line
and 425 ft W of E line)

Surface elevation: 6629 feet
Described section: 524 to 1708 feet
Mahogany marker: 763.7 feet

From	To	Description
524.0	526.0	Oil shale: medium to dark and some light brownish gray (10YR 4/2-3/1, some 5/2-6/2 in lower part). Very faint to moderately distinct, slightly irregular and distorted laminations; some small loop structures and displacements. Regular to some irregular thick parting; slightly conchoidal fracture. Common brown to black fossil fragments on parting surfaces (some may be insect larvae).
526.0	527.3	Oil shale: dark and some medium brownish gray (10YR 3/2-2/1, some 4/2-5/2). Very faint streaked bedding to faint slightly irregular and distorted laminations. Very irregular to rare regular thick parting; irregular to conchoidal fracture. Some fairly large brown to tan silty tuff lenses in lower part.
527.3	528.8	Oil shale: medium to dark brownish gray (10YR 4/2-2/1). Faint slightly irregular and distorted laminations; common small irregular loop structures and displacements. Slightly irregular thick parting; conchoidal fracture. Common fossil fragments on parting surfaces. Some fine brownish gray to white earthy lenses and streaks.
528.8	532.9	Oil shale: medium to dark brownish gray (10YR 4/2-3/2, rare 5/2). Faint to very faint, smooth to slightly irregular and distorted laminations; some small irregular loop structures. Regular to some irregular thick parting; irregular to conchoidal fracture. Rare thin irregular tuff stringers. Rare fine white to light gray, earthy to dense lenses. Common fossil fragments.
532.9	533.9	Oil shale: medium to dark and rare light brownish gray (10YR 5/2-3/2, rare 6/2). Faint smooth to slightly irregular and distorted laminations; common small loop structures and some imbricate displacements. Slightly irregular thick parting; slightly conchoidal fracture. Some fossil fragments on parting surfaces.
533.9	535.3	Oil shale: dark brownish gray to brownish black and rare medium brown (10YR 3/2-1/2, rare 4/3); rare resinous luster. Very faint to faint, smooth to distorted laminations and streaked bedding. Slightly irregular to very irregular thick parting; irregular to very conchoidal

^{1/} By L. G. Trudell

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Core samples from Equity Oil Company's Core BX-1--Continued

From	To	Description
		resinous luster. Faint to very faint slightly distorted laminations and streaked bedding; some loop structures. Slightly irregular to very irregular thick parting; very irregular fracture. Some very thin irregular gray to brownish gray silty-textured tuff stringers near base.
553.8	555.9	Oil shale: medium to dark brownish gray (10YR 4/2-2/1). Very faint smooth bedding to faint irregular and distorted laminations. Slightly irregular to very irregular thick parting; conchoidal fracture.
555.9	557.0	Oil shale: light to dark brownish gray (10YR 6/2-3/2, some 2/2). Faint irregular, distorted, and displaced to fairly smooth laminations; common small loop structures. Irregular thick parting; slightly irregular to conchoidal fracture. Common very irregular small white silty-textured crystalline streaks, stringers, and patches in upper part.
		Sample of shale with thin white stringer from 556.2 feet:
		X-ray - dolomite, quartz, analcite, fluorite, K-feldspar, unidentified peaks.
557.0	558.6	Oil shale: light to medium and some dark brownish gray (10YR and 2.5Y 6/2-4/2, some 3/2-2/1). Faint slightly irregular and distorted laminations; common loop structures and displacements in upper part. Irregular thick parting; slightly conchoidal fracture.
558.6	561.0	Oil shale: buff to medium and rare dark brownish gray (10YR 7/2-4/2, rare 3/2). Fairly smooth to irregular, distorted and displaced laminations, stringers and streaks. Irregular to slightly irregular thick parting; very irregular fracture. Some fine white streaks and lenses near top. White to light gray silty-textured tuff with some oil-shale bands and stringers from 559.0 to 559.8 feet.
		Sample of white to light gray tuff from 559.1 feet:
		X-ray - quartz, feldspar (albite and sanidine), analcite.
561.0	566.0	Missing.
566.0	569.0	Oil shale: buff to medium and rare dark brownish gray (10YR 7/2-5/2, rare 4/2-3/2 and 8/2). Distinct to faint slightly irregular and distorted laminations; very common small loop structures and displacements. Irregular to slightly irregular thick parting; conchoidal to very

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Core samples from Equity Oil Company's Core BX-1--Continued

From	To	Description
581.7	583.2	Marlstone and oil shale: buff to tan and some medium to dark brownish gray (10YR 8/2-5/3, some 4/2-2/2). Distinct to some faint, slightly irregular and distorted laminations; common irregular loop structures and displacements. Very regular to slightly irregular, thick to medium parting; conchoidal to slightly irregular fracture. A 0.2-foot band of dark brownish gray oil shale at 582.2 feet with an irregular vuggy(?) parting surface at base.
583.2	585.2	Oil shale: medium to dark brownish gray (10YR 4/2-2/2, some 5/3). Fairly distinct to faint, irregular and distorted to fairly smooth laminations; common fairly large loop structures and displacements. Slightly irregular to very irregular thick parting; conchoidal to very irregular fracture. Rare small, medium to dark gray silty lenses. Some irregular fractures with calcite crusts in lower part.
585.2	587.2	Oil shale: dark brownish gray to brownish black (10YR 3/2-1/2), rare very slight resinous luster. Very faint smooth to some irregular distorted laminations and streaked bedding; rare large loop structures. Regular to slightly irregular, thick to rare thin parting; irregular to conchoidal fracture. A 1/2- to 3/4-inch tan to brownish gray silty-textured tuff stringer with some fine disseminated pyrite and rare bitumen at 585.5 feet. Sample of tuff from 585.5 feet: X-ray - feldspar (albite), quartz; some analcite, dolomite, pyrite.
587.2	590.0	Oil shale: medium to dark brownish gray and rare tan (10YR 4/2-3/2, some 5/3-2/2, rare 6/3). Very faint to some distinct, fairly smooth to some irregular and distorted lamination; common small irregular loop structures. Regular to some very irregular thick parting; fairly smooth to irregular fracture. Some very irregular medium to thin, silty to granular porous tuff stringers in lower part.
590.0	591.0	Missing?
591.0	592.5	Oil shale and tuff: dark brownish gray oil shale (10YR 3/2-2/1) and very light buff to brown tuff (10YR 8/1-4/3). Very faint slightly irregular and distorted laminations to distinct contorted stringers and streaks. Very irregular parting and fracture. Very badly broken up and mixed up; true length doubtful; uneven sample split.

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Core samples from Equity Oil Company's Core BX-1--Continued

From	To	Description
606.1	608.5	Oil shale: dark brownish gray in upper part (10YR 3/2-2/2), medium to dark brown and brownish gray in lower part (10YR 5/3-2/2). Very faint to faint, smooth to irregular distorted laminations; some irregular loop structures and displacements. Regular to slightly irregular thick parting; slightly irregular to conchoidal fracture. Rare diagonal fractures with fine disseminated pyrite. Some very small buff earthy lenses in lower part.
608.5	610.0	Missing?
610.0	613.1	Oil shale: medium to dark brownish gray (10YR 4/2-2/2). Very faint smooth to slightly irregular and distorted laminations. Irregular to regular, thick to rare medium parting; conchoidal fracture. Some very irregular tan tuff stringers in upper 0.2 foot. Very rare thin tan to buff and light gray, earthy to fine crystalline streaks and lenses.
613.1	614.3	Oil shale: tan to dark brownish gray (10YR 5/3-3/2, rare 6/3 and 2/2). Very faint to some moderately distinct, slightly irregular and distorted laminations. Irregular thick parting; conchoidal to irregular fracture. Some thin very irregular and distorted, brownish gray to buff tuff stringers. Some smooth vertical fractures with rare calcite crusts.
614.3	619.0	Oil shale: dark and rare medium brown and brownish gray (10YR 3/3-2/2, rare 4/3-5/3). Faint and rare distinct, slightly irregular and distorted to smooth lamination. Regular to some very irregular thick parting; very conchoidal to irregular fracture. Common smooth to irregular vertical and diagonal fractures with calcite crusts. Lower part badly broken up and mixed up. Rare thin tuff streaks and lenses.
619.0	620.0	Missing?
620.0	626.0	Oil shale: dark and rare medium brown and brownish gray (10YR 3/3-2/2, rare 4/3-4/2). Very faint slightly irregular and distorted laminations. Slightly irregular to very irregular thick parting; conchoidal to very irregular fracture. Common smooth to irregular fractures with calcite crusts. A 1- to 1-1/2-inch very irregular buff tuff with fine contorted shale stringers at 621.9 feet; some small to large tuff lenses at 622.3 feet; rare thin tuff stringers and small lenses in other parts. Some parts badly broken up.

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Core samples from Equity Oil Company's Core BX-1--Continued

From	To	Description
659.2	660.4	Oil shale; dark brownish gray (10YR 3/2-2/1). Very faint distorted streaked bedding and some laminations. Slightly irregular thick parting; irregular to very conchoidal fracture. Some irregular fractures with calcite crusts and very fine grained pyrite in upper part. Some very thin brown crystalline tuff stringers and lenses in lower part.
660.4	662.5	Oil shale: medium to dark brownish gray (10YR 4/2-2/2). Very irregular and contorted to some slightly distorted laminations and stringers. Irregular to slightly irregular thick parting; irregular to conchoidal fracture. Some very irregular small to medium brown crystalline lenses and stringers--especially in upper part. Some diagonal fractures with calcite crusts. Sample of brown crystalline lenses and stringers from 660.8 feet: X-ray - calcite; some quartz, analcite.
662.5	668.5	Oil shale: dark and rare medium brownish gray (10YR 3/2-2/1, rare 4/2). Faint to very faint irregular, distorted and displaced to some fairly smooth laminations and streaked bedding. Slightly irregular to very irregular thick parting; conchoidal to very irregular fracture. A thick irregular light brownish gray to tan vertical injected tuff runs along side of core from top to 664.5 feet. Common fine intersecting calcite-filled fractures from 664.0 feet to base. Some parts below 664.0 feet are very badly broken up; true length doubtful; uneven sample split. Sample of injected tuff from 663.3 feet: X-ray - quartz, feldspar (albite); some analcite, dolomite, calcite.
668.5	669.0	Oil shale: light to medium brownish gray (10YR 6/2-4/2). Large irregular core pieces with laminae parallel to core surfaces (like 657.5 feet; may be out of sequence). Some small irregular vugs.
669.0	673.0	Missing?
673.0	674.4	Oil shale: dark and some medium brownish gray (10YR 3/2-2/1, some 4/2). Very faint to rare moderately distinct, slightly irregular and distorted laminations and streaked bedding. Slightly irregular thick parting; conchoidal fracture. Some fine irregular calcite-filled fractures.

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Core samples from Equity Oil Company's Core BX-1--Continued

From	To	Description
713.0	715.0	Oil shale: medium and some light to dark brown and brownish gray (10YR 4/3 and 4/2-3/2, some 5/3-6/2 in lower part, rare 2/2 in upper part). Faint to distinct smooth laminations; common small loop structures and displacements. Regular to very irregular thick parting; conchoidal to very irregular fracture. Some very fine calcite-filled fractures.
715.0	716.0	Oil shale: medium to dark brownish gray and rare brownish black (10YR 4/2-2/2, rare 1/2). Fairly distinct to faint irregular, distorted and displaced laminations. Slightly irregular thick parting; conchoidal fracture.
716.0	717.0	Oil shale: dark brownish gray and some brownish black (10YR 3/2-2/2, some 1/2); some resinous luster. Faint smooth to slightly irregular and distorted laminations. Slightly irregular thick parting; conchoidal and rare irregular hackly fracture. Two thin irregular light brownish gray to buff earthy tuff stringers in upper part.
717.0	719.0	Oil shale: dark brown and brownish gray (10YR 3/3-2/2). Faint to very faint smooth laminations. Very regular to slightly irregular thick parting; slightly conchoidal fracture. Very rare thin brownish gray to buff stringers and lenses. Sample of oil shale with very thin buff stringer from 717.3 feet: X-ray - feldspar (albite); some dolomite, quartz, analcite.
719.0	720.5	Oil shale: medium to dark brown and brownish gray, rare brownish black (10YR 4/3-2/2, rare 5/3 and 1/2). Faint to fairly distinct, smooth to slightly irregular and distorted laminations; some moderately large loop structures. Very regular to some irregular thick parting; slightly conchoidal to very conchoidal fracture. Rare very thin dense gray crystalline lenses and streaks. Very rare fine irregular calcite-filled fractures. Sample of oil shale with very thin dense gray crystalline streaks from 720.0 feet: X-ray - dolomite, pyrite; some calcite, quartz.
720.5	721.0	Missing?
721.0	722.2	Oil shale: dark brown and brownish gray to some brownish black (10YR 2/3-2/2, some 4/3-1/2), very common resinous and some waxy luster. Very faint to faint, smooth to slightly irregular and distorted laminations and streaked bedding. Regular to slightly irregular, thick to rare thin shaly parting; irregular to hackly fracture. Rare

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Core samples from Equity Oil Company's Core BX-1--Continued

From	To	Description
727.2	728.4	Oil shale: medium to dark and some light brownish gray (10YR 5/2-3/2, some 6/2-7/2). Faint to some distinct, contorted and fractured to some slightly distorted laminations. Very irregular to some regular thick parting; very irregular fracture. Common medium to small cavities in upper part. A 0.2-foot light buff marlstone or tuff band 728.0 feet. Some irregular fractures with fine disseminated pyrite near base; common fine pyrite on parting surface at base.
728.4	733.5	Oil shale and marlstone: very light buff to some medium brownish gray (10YR 8/2-6/2, some 5/2-4/2). Very distinct to faint smooth laminations; very common loop structures and displacements. Regular thick to medium shaly parting; slightly irregular to slightly conchoidal fracture.
733.5	734.1	Oil shale: buff to medium and some dark brownish gray and brown (10YR 7/2-4/2 and 4/3, some 3/2 and 3/3). Distinct smooth laminations; very common loop structures. Regular to slightly irregular thick parting; conchoidal fracture.
Bottom A-groove 734.1	735.4	Oil shale: medium to dark brown and some tan to buff (10YR 4/3-3/3, some 5/3-7/2). Faint and rare distinct smooth laminations. Regular to slightly irregular, thick to medium parting; conchoidal to irregular fracture. A slightly irregular diagonal fracture with fine pyrite runs through the interval. Some very fine buff to tan lenses and streaks in upper part. A fine irregular chalky white stringer at 735.1 feet.
735.4	737.5	Oil shale: dark brown and brownish gray to rare brownish black (10YR 3/3-2/2, rare 1/2); rare resinous streaks and laminae. Faint distorted to some smooth streaked bedding and laminations. Irregular to slightly irregular thick parting; irregular fracture. Rare very thin brownish gray to tan tuff lenses and stringers.
737.5	742.3	Missing?
742.3	743.5	Oil shale: light to dark brownish gray and rare buff (10YR 6/2-3/2, rare 2/1 and 7/2). Moderately distinct to very faint, irregular and distorted to fairly smooth laminations; common loop structures. Slightly irregular to regular, medium to thick shaly parting; irregular to conchoidal fracture. Some thin brownish gray to tan, dense to earthy stringers and lenses.

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From	To	Description
751.6	753.0	Oil shale: dark brownish gray to brownish black, rare dark brown (10YR 2/2-1/2, rare 3/2-3/3); some resinous and rare waxy luster. Faint slightly irregular and distorted to smooth laminations. Regular to slightly irregular, medium to thick shaly parting; slight hackly to irregular fracture. Rare thin irregular light brownish gray to buff-white tuff stringers. A very irregular parting surface with fine black granular blebs near top.
753.0	754.4	Oil shale: dark brown and brownish gray to some brownish black (10YR 3/3-2/2, some 1/2); rare slight resinous luster. Very faint slightly distorted laminations to some massive. Regular to slightly irregular, thick and rare thin parting; irregular to conchoidal fracture. A large brown silty-textured tuff lens at 754.0 feet.
754.4	756.0	Oil shale: dark and some medium brown and brownish gray (10YR 3/3-2/2, some 4/3-5/3). Massive to faint and rare distinct slightly irregular and distorted laminations. Very irregular thick parting; very irregular to conchoidal fracture. Rare thin buff to brownish gray tuff stringers. Rare irregular vuggy parting surfaces.
756.0	759.0	Oil shale: medium to dark and rare light brownish gray (10YR 4/2-3/2, rare 5/2-6/2 and 2/2). Very faint to faint, slightly irregular and distorted to smooth laminations. Slightly irregular to regular thick parting; conchoidal to slightly irregular fracture. Rare diagonal fractures with calcite crusts.
759.0	761.0	Oil shale: medium to dark brownish gray and rare brownish black and buff (10YR 4/2-2/2, rare 1/2 and 5/2-7/2). Faint to some moderately distinct, smooth to slightly irregular and distorted laminations; some loop structures and displacements. Regular thick parting; conchoidal fracture.
761.0	763.7	Oil shale: tan and rare buff to dark brown and brownish gray (10YR 6/3-3/3 and 3/2, rare 7/2 and 2/2). Faint to distinct smooth laminations; very common small loop structures. Regular thick parting; slightly conchoidal fracture. A very thin irregular pinched-out brownish gray to buff tuff stringer near top.
Mahogany marker 763.7	764.5	Tuff: light brownish gray to some buff-white (2.5Y 6/2-7/2, some 8/2-9/2) and rare light to medium gray (6-5N), earthy to silty textured. Massive; some thin to fine lean oil-shale stringers near top. Irregular parting and fracture. Common very small mud lumps just above base.

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From	To	Description
778.0	779.4	Oil shale: dark and rare medium brown and brownish gray (10YR 3/3-2/2, rare 4/2); common resinous luster. Very faint to faint smooth laminations; some loop structures. Regular to slightly irregular thick parting; irregular to conchoidal fracture.
779.4	781.8	Missing?
781.8	782.9	Oil shale: dark to some medium brown and brownish black (10YR 3/3-2/2, some 4/3-1/2); common resinous luster--especially in lower half. Faint smooth laminations; some loop structures. Regular thick parting; irregular to conchoidal fracture.
782.9	784.0	Oil shale: dark brown to brownish black (10YR 3/3-1/2); very common resinous and rare waxy luster. Very faint smooth laminations. Regular thick to medium shaly parting; conchoidal fracture. Some small dense to silty dark brownish gray tuff lenses at 783.4 feet. An irregular diagonal fracture with some very fine disseminated pyrite in lower half. A 1-inch very irregular dark brownish gray tuff stringer near base. Sample of thick dark brownish gray tuff stringer from 783.9 feet:
784.0	786.0	X-ray - feldspar (albite), quartz, some dolomite. Oil shale: dark brown to rare brownish black (10YR 3/3-2/2, rare 1/2); rare slight resinous luster. Faint smooth to some irregular distorted laminations. Slightly irregular to very irregular thick parting; conchoidal to irregular fracture.
786.0	788.0	Oil shale: dark to some medium brown and brownish black (10YR 3/3-2/2, some 4/3 and 1/2, rare 5/3); some resinous luster in lower part. Faint to some fairly distinct, smooth to distorted laminations and streaked bedding; some fairly large loop structures from 786.7 to 787.2 feet. Very regular to some very irregular thick parting; conchoidal to irregular fracture.
788.0	789.0	Oil shale: dark brownish gray to brownish black (10YR 2/2-1/2, some 3/2); some resinous and rare waxy luster. Very faint smooth to slightly distorted streaked bedding and some laminations. Slightly irregular to regular thick parting; conchoidal and some slight hackly fracture.
789.0	795.0	Oil shale: dark brown and brownish gray, some brownish black in upper and lower parts and some medium brown in middle (10YR 3/3-2/2, some 1/2 and 4/3); some resinous luster. Very faint to faint, smooth to very irregular

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Core samples from Equity Oil Company's Core BX-1--Continued

From	To	Description
803	804.0	Oil shale: dark brown to brownish black (10YR 3/3-1/2); some resinous luster. Faint fine slightly distorted laminations and streaks; common irregular loop structures and displacements. Slightly irregular parting; irregular to some very slight hackly fracture.
804	805.1	Oil shale: tan to medium and some dark brown (10YR and 2.5Y 6/3-4/3, some 3/3). Faint to fairly distinct smooth laminations; some loop structures and displacements. Irregular to some regular thick parting; very conchoidal fracture. Very rare very fine dark gray to buff streaks.
805	806.1	Oil shale: dark and rare medium brown to some brownish black (10YR 3/3-2/2, some 1/2, rare 4/3); some very fine resinous streaks. Faint and rare moderately distinct, smooth to distorted laminations and streaked bedding. Slightly irregular thick parting; conchoidal fracture.
806	807.7	Oil shale: dark brown to brownish black (10YR 3/3-1/2); common resinous and some waxy luster. Very faint slightly distorted to smooth laminations; common loop structures. Regular to irregular, thick to medium parting; conchoidal to irregular fracture. Some very irregular thin to medium, earthy to silty buff tuff stringers and lenses.
807	809.0	Oil shale: dark brown to rare brownish black (10YR 3/3-2/2, rare 1/2). Faint smooth to slightly irregular and distorted laminations; some loop structures. Regular to irregular thick parting; conchoidal fracture. Some fine irregular buff tuff streaks near top.
808	810.0	Oil shale: tan to dark brown and brownish gray, some buff in lower part (10YR 6/3-4/3 and 4/2, some 7/2 and 2/2). Faint to distinct, slightly irregular and distorted to smooth laminations; common small irregular loop structures and displacements. Slightly irregular thick to medium parting; slightly irregular to slightly conchoidal fracture. An irregular diagonal fracture with crystalline calcite crusts near top. Very rare very fine light to dark brownish gray streaks in lower part.
810	811.4	Oil shale: dark brown and brownish gray, rare brownish black streaks (10YR 3/3-3/2, rare 2/2-1/2). Very faint smooth to slightly distorted streaked bedding. Slightly irregular thick parting; slightly irregular to slightly conchoidal fracture. Some fine calcite-filled fractures near top. Some small to fine, tan to brown silty tuff lenses and streaks in lower part.

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From	To	Description
		irregular parting; very irregular to very conchoidal fracture. Some earthy to spongy brecciated zones with crystalline calcite and very fine disseminated pyrite in upper part. Some fine calcite-filled fractures in lower part. Very badly broken up and mixed up; true length doubtful.
828.0	830.8	Oil shale: dark and rare medium brownish gray, some brownish black in lower part (10YR 3/3-2/2, some 1/2, rare 4/3). Moderately distinct to faint, smooth to some irregular, distorted and displaced laminations; common loop structures. Very regular to slightly irregular, thick to medium shaly parting; slightly irregular to very conchoidal and rare hackly fracture. Rare fine buff tuff stringers and streaks. Rare very fine calcite-filled fractures. A 1/2-inch light gray silty to fine sandy-textured tuff stringer at 830.1 feet. Sample of gray tuff from 830.1 feet: X-ray - analcite, feldspar (albite), dolomite, quartz, pyrite, illite.
830.8	833.2	Oil shale: dark and rare medium brown and brownish gray, very rare tan (10YR 3/3-2/2, rare 4/3-6/3). Faint and rare distinct smooth laminations; rare loop structures. Regular to some irregular thick parting; conchoidal fracture. Some fine calcite-filled fractures; a slightly irregular vertical fracture with very common fine pyrite crystals from 831.5 to 831.9 feet. A very thin irregular buff silty tuff stringer at 832.2 feet. Very rare very fine dark gray pyritic streaks in lower part.
833.2	835.0	Missing?
835.0	837.5	Oil shale: medium to some dark brown and brownish gray (10YR 5/3-4/3 and 4/2, some 3/3-3/2). Distinct to very faint, smooth to slightly irregular, distorted and displaced laminations. Very irregular to some very regular, medium to thick parting; very irregular to conchoidal fracture. Some fractures and parting surfaces with very fine pyrite crystals. Rare irregular vuggy cavities. A thin earthy buff tuff on parting surface at top. Very badly broken up and mixed up; true length doubtful.
837.5	840.0	Oil shale: dark brownish gray, some brownish black in upper part and medium brown in lower part (10YR 3/2-2/2, some 1/2 and 4/2-5/3). Faint to some distinct smooth

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From	To	Description
		Sample of shale with small tan to brown earthy lenses from 852.0 to 852.5 feet: X-ray - dolomite; some calcite, feldspar, quartz.
852.5	854.5	Oil shale: dark brownish gray and some brownish black (10YR 3/2-2/2, some 1/2); some resinous luster. Very faint distorted to some smooth laminations, stringers and streaks. Slightly irregular thick parting; slightly irregular to conchoidal fracture. Common fine buff to white calcite streaks. Some small and rare large tan to brown lenses. Some very fine pyrite blebs. Sample of dense dark brown lens from 854.1 feet: X-ray - dolomite.
854.5	858.0	Oil shale: dark and rare medium brown to brownish black (10YR 3/3 and 3/2-1/2, rare 4/2 and 4/3); some very slight resinous luster. Faint to some moderately distinct, smooth and rare irregular, distorted and displaced laminations; rare loop structures. Regular to some very irregular, thick to medium parting; conchoidal to some very irregular fracture. Some fine buff to white calcite streaks near top. Some thin irregular tan to brown tuff stringers in middle part. Common very fine irregular fractures with some calcite and rare very fine pyrite in lower part. Sample of medium to dark brownish gray oil shale from 857.5 feet: X-ray - dolomite, calcite, feldspar, quartz.
858.0	860.0	Oil shale and mudstone: buff to some dark brown and brownish gray (10YR 8/2-4/3 and 4/2, some 3/3-2/2). Faint irregular and distorted to contorted and broken laminations, stringers and streaks; some very irregular thin to thick earthy buff mudstone stringers (crushed shale?). Very irregular parting and fracture. Very badly broken up and mixed up; true length doubtful. Sample of buff mudstone from 858.1 feet: X-ray - dolomite; some quartz, feldspar (K and Na), calcite.
860.0	863.0	Oil shale: medium to dark brown and brownish gray (10YR 5/3-3/3 and 3/2, some 2/2). Very faint laminations and streaked bedding. Fractured to brecciated. Common small to moderately large irregular spongy cavities with fine drusy calcite. Lower part very badly broken up and mixed up; true length doubtful.
863.0	865.0	Missing?

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from Equity Oil Company's Core BX-1--Continued

From	To	Description
877.5	883.0	Missing?
883.0	883.5	Oil shale: medium brown to dark brownish gray (10YR 4/3-2/2) and medium olive gray (5Y 5/2-4/2). Moderately distinct to very faint, fairly smooth to very contorted laminations. Very irregular discontinuous core pieces. Very irregular fractures with fine pyrite crystals. Some flat platy crystal cavities.
883.5	885.0	Marlstone and very lean oil shale: buff to medium brownish gray and olive gray (2.5Y and 5Y 7/1 and 7/2-5/1 and 5/2). Faint very smooth laminations. Very regular to some irregular, thick to thin shaly parting; slightly conchoidal to some irregular fracture. Some to very common fine dark sulfide blebs (some in lower part have blue to reddish purple iridescence--like bornite). Common very fine calcite streaks in upper part. Sample of olive gray marlstone with common fine iridescent sulfide blebs from 884.9 feet: X-ray - dolomite, feldspar (sanidine, albite), illite.
885.0	886.7	Oil shale: light to medium and some dark olive gray and brownish gray (5Y and 2.5Y 6/2-4/2, some 3/2). Very faint to faint, smooth to slightly irregular and distorted laminations; very faint streaked bedding to massive near base. Very regular to very irregular, thick to thin parting; conchoidal to irregular fracture. Common fine calcite streaks and rare small irregular patches. Some fine sulfide blebs in upper part. Rare small irregular vugs in lower part.
886.7	887.9	Marlstone: light to medium olive gray (5Y 6/2-5/3 and 5/1) and rare brown to brownish gray (2.5Y 5/3-4/2). Very faint distorted to contorted and broken laminations, stringers and streaks. Very irregular parting and fracture. Some fine buff calcite streaks in upper part.
887.9	888.5	Oil shale: dark and some medium brown to rare brownish black (10YR 3/3-2/2, some 4/3-4/2, rare 1/2). Faint irregular and slightly contorted to distorted laminations and streaks. Regular to slightly "curly," medium to very thin shaly parting in upper part; thick irregular parting in lower part; very hackly to conchoidal fracture. Rare very fine disseminated crystals. Sample of oil shale from 888.3 feet: X-ray - dolomite, feldspar (sanidine, albite); some calcite, quartz?

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from Equity Oil Company's Core BX-1---Continued

From	To	Description
899.0	904.0	Oil shale: medium to dark brown and brownish gray, rare tan and brownish black (10YR 5/3-2/2, rare 6/3 and 1/2); very rare resinous luster. Distinct to faint, smooth to some irregular and distorted laminations. Regular to very irregular, thick to medium parting; conchoidal and some irregular fracture. Some thick irregular orange-buff (10YR 7/4-7/3) tuffs with fine contorted shale stringers in middle part. Sample of orange-buff tuff with fine shale stringers from 901.4 feet: X-ray - feldspar (albite, microcline and/or sanidine).
904.0	906.0	Oil shale: dark brownish gray and some medium brown (10YR 3/2-2/2, some 4/3-5/3). Distinct smooth laminations to faint smooth streaked bedding; some loop structures and displacements in upper part. Regular to slightly irregular, thick to medium shaly parting; irregular to conchoidal fracture. Rare small tan to buff tuff lenses in upper part. Rare very fine pyrite streaks in lower part.
906.0	907.2	Oil shale: medium to dark brown and brownish gray (10YR 5/3-3/3 and 3/2). Faint to fairly distinct smooth laminations. Very badly broken up and mixed up; true length doubtful.
907.2	908.2	Oil shale: medium to dark brown and brownish gray (10YR 5/3 and 5/2-3/2). Moderately distinct slightly irregular and distorted laminations; common loop structures in upper part. Regular to slightly irregular, thick to medium shaly parting; slightly conchoidal fracture. Very rare thin buff tuff streaks.
908.2	910.2	Oil shale: buff and tan to some dark brown and brownish gray (10YR and 2.5Y 7/2 and 6/3-4/2 and 4/3, some 3/3-2/2). Distinct to faint, smooth and rare irregular distorted laminations. Very regular and rare irregular, thick to medium shaly parting; conchoidal fracture. Some small to moderately large orange-buff tuff lenses near top. Rare fine gray laminae and streaks.
910.2	911.2	Oil shale: dark and some medium brownish gray and brown (10YR 3/2-2/2, some 3/3-5/3). Faint to very faint smooth laminations. Very regular thick to some thin shaly parting; conchoidal to irregular fracture. Some irregular vertical fractures with very thin patchy dolomite (?) crusts and rare very fine pyrite crystals. A very thin brown to tan pinched-out tuff stringer near base.

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from Equity Oil Company's Core BX-1--Continued

From	To	Description
		zone at 923.8 to 924.1 feet. Some thin irregular gray to black stringers and small lenses from 924.1 to 925.5 feet. A few fairly large (up to 2 inches) empty limonite-stained nahcolite vugs with radial platy boxworks and some powdery white to dark gray coatings from 925.7 to 929.3 feet.
		Sample of dark gray silty-textured stringer from 925.4 feet:
		X-ray - feldspar (albite, some K), pyrite, some dolomite, rare biotite?
930.2	931.8	Oil shale: dark and rare medium brownish gray and brown to some brownish black (10YR 3/2 and 3/3-2/2, some 1/2, rare 4/2-4/3); some resinous to waxy luster--especially from 931.1 to 931.5 feet. Faint to very faint irregular distorted laminations and some <u>very</u> faint distorted to smooth bedding; common small irregular loop structures and displacements. Slightly irregular thick to medium shaly parting; fairly smooth to slightly irregular and conchoidal fracture. Some very irregular thin buff to brown (10YR 7/2-4/4) tuff stringers and lenses.
931.8	934.3	Oil shale: medium to dark brownish gray and some brown (10YR and 2/5Y 5/2-3/2, some 4/3-3/3). Faint to fairly distinct, smooth to slightly irregular and distorted laminations; rare loop structures and displacements. Very regular to rare irregular, thick to medium shaly parting; irregular to slightly conchoidal fracture. Rare thin to fine, gray to brownish gray stringers and lenses in lower part.
934.3	935.0	Missing?
935.0	936.4	Oil shale: dark and some medium brown to brownish black (10YR 3/3-1/2, some 4/3); very common resinous and some waxy luster. Moderately distinct to faint, very irregular, distorted and displaced laminations; some irregular loop structures. Slightly irregular thick to medium shaly parting; irregular to conchoidal fracture. Some very irregular thin to medium, brownish gray to gray tuff stringers and lenses.
936.4	937.8	Oil shale: dark and some medium brown to rare brownish black (10YR 3/3-2/2, some 4/2-4/3, rare 1/2); rare resinous to waxy luster. Faint to moderately distinct, very irregular and distorted to smooth laminations; some small loop structures. Very irregular to some regular thick parting; slightly conchoidal and some

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from Equity Oil Company's Core BX-1--Continued

From	To	Description
944.0	945.0	Oil shale: dark brownish gray to some brownish black (10YR 3/2-2/2, some 1/2); common satiny to resinous luster. Faint smooth to distorted streaked bedding. Regular to irregular, thick to medium parting; slightly irregular fracture. Irregular slightly vuggy limonite-stained parting surface at base.
945.0	946.7	Oil shale: medium to dark brown and brownish gray (10YR 4/3 and 4/2-3/2, rare 2/2). Very faint to faint, irregular and distorted to fairly smooth laminations; common loop structures and displacements. Irregular to regular thick parting; irregular to conchoidal fracture. Rare very thin dark gray silty pyritic streaks. A vuggy brecciated zone with some dull to greasy black organic material and pyrite in upper 0.1 foot. Some irregular fractures with rare very fine pyrite crystals in middle part.
946.7	947.7	Oil shale: dark brownish gray to rare brown and brownish black (10YR 3/2-2/2, rare 3/3 and 1/2); some satiny to resinous luster. Very faint to faint, slightly contorted to smooth laminations. Irregular to very smooth, thick to thin parting; irregular to conchoidal fracture. Rare very thin brown to tan tuff stringers and lenses.
947.7	949.3	Oil shale: medium to dark brownish gray (10YR 4/2-3/2, rare 5/2-2/2). Very faint to moderately distinct, contorted to some smooth laminations. Slightly irregular to very smooth, thick to medium shaly parting; irregular to conchoidal fracture.
949.3	950.7	Oil shale: medium and some dark brownish gray and brown (10YR 5/2 and 5/3-4/2 and 4/3, some 3/2-2/2). Very faint to moderately distinct, slightly irregular and distorted to smooth laminations; rare loop structures. Very regular to slightly irregular, thick to rare thin shaly parting; slightly irregular fracture. Common thin to fine gray pyritic streaks. Very rare fine resinous to vitreous black organic streaks.
950.7	952.2	Oil shale: medium to dark brownish gray and brown, some tan and buff (10YR and 2.5Y 5/2-5/3-3/2 and 3/3, some 6/3-7/2). Very faint to some distinct, irregular and distorted to broadly curved and displaced laminations and streaked bedding; some loop structures. Irregular to very smooth, thick to medium parting; very irregular to conchoidal fracture. Gritty to vuggy slightly brecciated shale in upper 0.4 foot. Common fine buff earthy streaks and lenses near base.

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from Equity Oil Company's Core BX-1--Continued

From	To	Description
963.7	965.4	Marlstone and oil shale: buff to some dark brownish gray (2.5Y 7/1-5/2, some 4/2-3/2). Very faint to some distinct, smooth to slightly irregular and distorted laminations. Regular thin to rare thick shaly parting; very irregular fracture. Common fine gray laminae and streaks. Very badly broken up and mixed up; true length doubtful. Sample of marlstone with common fine gray laminae from 963.7 to 965.4 feet: X-ray - dolomite, feldspar (albite, sanidine), analcite.
965.4	967.7	Oil shale: dark and some medium brownish gray to brownish black (10YR 2/2-1/2, some 3/2-4/2); very common satiny to resinous luster. Very faint smooth streaked bedding and some laminations (in lighter bands). Very regular to slightly irregular, thick to medium parting; slightly irregular to very slight hackly fracture. Several small black fossil fish on parting surfaces near base.
967.7	968.7	Oil shale: dark and rare medium brown to brownish black (10YR 3/3-1/2, rare 4/3); very common resinous to waxy luster. Faint to moderately distinct, smooth to slightly irregular and distorted laminations; very common loop structures. Regular thick to rare thin shaly parting; slightly conchoidal to very slight hackly fracture. Rare very thin light gray to white very fine silty-textured stringers with some irregular bitumen impregnations.
968.7	969.9	Oil shale: medium to dark brownish gray and rare brownish black (10YR 5/2-2/2, rare 1/2); rare resinous luster. Moderately distinct to very faint, smooth to slightly irregular and distorted laminations; some small loop structures and displacements. Regular thick to rare thin shaly parting; smooth to conchoidal and rare very slight hackly fracture. Some very fine pyrite streaks. Rare very thin light gray to white chalky stringers and streaks.
969.9	974.3	Oil shale: dark brownish gray to brownish black (10YR 3/2-1/2); common slight resinous to very rare waxy luster in lower part. Very faint slightly irregular and distorted to smooth laminations and streaked bedding; some loop structures in lower part. Very regular to rare irregular, thick to rare thin shaly parting; slightly irregular and rare slight hackly fracture. Common fine buff earthy streaks and rare small lenses in upper part (partly dissolved on core surface). A 2-1/2-inch empty

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from Equity Oil Company's Core BX-1--Continued

From	To	Description
986.7	989.3	bedding. Regular to some very irregular thick parting, irregular fracture. Some vuggy fractured zones in upper part. Rare fine pyrite blebs. Oil shale: light to dark brownish gray (10YR and 2.5Y 6/2-3/2, some 2/2); rare resinous to waxy luster. Very faint to moderately distinct, very irregular, distorted and displaced to fairly smooth laminations; rare to very common small loop structures. Very irregular to some regular thick parting; very irregular fracture. Very common very irregular thin buff to tan granular crystalline streaks and stringers with common pyrite--commonly vertical or diagonal. Sample of shale with granular crystalline stringers from 988.5 feet: X-ray - calcite; some feldspar (albite, K), dolomite, quartz, illite, pyrite.
989.3	992.0	Missing?
992.0	995.8	Oil shale: medium to dark brownish gray (2.5Y 4/2-3/2, rare 5/2 and 2/2); some tan marlstone in upper part (2.5Y 6/3). Very faint to faint very smooth laminations; some slightly contorted laminations in marlstone in upper part. Very regular to rare irregular, thin to thick shaly parting; slightly irregular to conchoidal and rare coarse hackly fracture. Some to common very fine disseminated crystals and fine pyrite blebs.
995.8	996.9	Oil shale: dark and rare medium brownish gray to brownish black (10YR 2/2-1/2, some 3/2, rare 4/2); common slight resinous luster. Faint to <u>very</u> faint, slightly irregular and distorted laminations and streaked bedding; common small displacements and some irregular loop structures. Regular to slightly irregular thick shaly parting; slightly irregular to some slight hackly fracture. Some fine earthy to granular buff calcite streaks and spots. Very rare fine disseminated crystals and pyrite blebs. Sample of very faintly bedded dark brownish gray to brownish black oil shale with rare very fine disseminated crystals from 996.2 feet: X-ray - dolomite; feldspar (Na and K), quartz; some analcite, illite.
996.9	1001.3	Marlstone and mudstone: buff-white to gray-buff and some light to medium brownish gray (2.5Y 9/2-7/2 and 7/1; some 6/2 and 6/1-5/2; some slight olive tint to almost

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from Equity Oil Company's Core BX-1---Continued

From	To	Description
1009.4	1013.4	Oil shale: tan to dark brown and brownish gray (10YR 6/3-3/3 and 3/2, some 2/2 in upper and lower parts). Distinct to some faint smooth laminations; some small loop structures and displacements. Very regular to some irregular thick parting; smooth to slightly irregular fracture. Very common fine buff calcite streaks and lenses with pyrite. Common fine dark brownish gray to black blebs and streaks in upper part. Sample of oil shale with very fine dark blebs from 1010.7 feet: X-ray - dolomite, feldspar (albite, some K).
1013.4	1016.8	Oil shale: medium to dark brownish gray (10YR and 2.5Y 4/2-2/2, rare 5/2). Moderately distinct to very faint, slightly irregular and distorted laminations; common irregular loop structures. Regular to very irregular thick parting; smooth to very irregular fracture. Very common fine calcite streaks and lenses. Very rare small tan tuff lenses in lower part.
1016.8	1017.9	Oil shale: medium to dark brownish gray and some brown (10YR and 2.5Y 5/2-2/2, some 5/3-4/3). Faint irregular and distorted to contorted and broken laminations, stringers and streaks. Slightly irregular to very irregular, medium to thick parting; very irregular fracture. Common irregular fractures and some brecciated shale. Some fine buff earthy streaks and stringers. Some medium to thin buff tuff bands near base.
1017.9	1020.0	Oil shale: dark to some medium brownish gray and rare brown (10YR and 2.5Y 2/2-3/2, some 4/2, rare 4/3). Very faint slightly distorted to smooth laminations and streaked bedding. Regular to irregular thick parting; slightly irregular to conchoidal fracture. Common very faint thin to fine gray streaks. Rare thin dark brown to tan stringers and lenses in upper part.
1020.0	1022.0	Oil shale: dark to medium brownish gray and brown (2.5Y 3/2-5/3). Very faint to faint, smooth to slightly irregular and distorted laminations. Very regular to slightly irregular thick parting; smooth to slightly irregular fracture. Common to rare fine faint gray laminae and streaks. Common very fine black spots and needles.
1022.0	1023.2	Oil shale: light to dark brownish gray and olive gray, rare tan and black (2.5Y and 5Y 6/2-3/2, rare 6/3 and

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from Equity Oil Company's Core BX-1--Continued

From	To	Description
		Regular to some very irregular, thick to rare thin shaly parting; conchoidal to irregular fracture. Common fine pyrite blebs and some buff earthy spots in middle part. A very irregular thin yellowish buff earthy stringer with some small dark gray pyritic blebs at 1032.3 feet. Sample of yellowish buff earthy stringer from 1032.3 feet: X-ray - feldspar (sanidine, some Na), some pyrite.
1032.9	1033.9	Oil shale: light to some dark brownish gray and olive gray (2.5Y and 5Y 6/2-4/2, some 3/2). Very faint to some moderately distinct, irregular, distorted and displaced laminations. Slightly irregular to irregular, thick to medium parting; very irregular fracture. Common small irregular patches and stringers of buff earthy to granular crystalline calcite with some pyrite. Some earthy buff mudstone near base.
1033.9	1036.6	Mudstone and oil shale: buff to medium olive gray and brownish gray (5Y and 2.5Y 7/2-5/2, some 8/2 and 4/2). Massive to faint and some moderately distinct distorted streaked bedding; some faintly spotted conglomerate in lower part. Very irregular to some regular, thick to medium parting; very irregular to slightly irregular fracture. Common fine earthy buff specks and streaks in lower part. Upper part badly broken up and mixed up; true length doubtful. Sample of massive light olive gray mudstone from 1034.8 feet: X-ray - dolomite, quartz; some feldspar (Na and K), illite.
1036.6	1038.0	Oil shale: buff to some dark brownish gray and brown (2.5Y 7/2 and 7/3-4/2 and 4/3, some 3/2). Moderately distinct to faint; slightly irregular and distorted to some very smooth laminations. Very regular to rare irregular, thick to some thin shaly parting; slightly irregular to conchoidal fracture. Very common fine earthy buff spots and streaks. Some fine dark gray streaks and laminae.
1038.0	1039.8	Oil shale: medium olive gray and brownish gray, rare tan to buff (5Y and 2.5Y 5/2-4/2, rare 6/3-7/2). Very faint to faint, slightly distorted to very smooth laminations and streaked bedding. Regular to some very irregular, thick to medium parting; very conchoidal to irregular

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from Equity Oil Company's Core BX-1--Continued

From	To	Description
1049.7	1050.3	Marlstone: gray-buff to light brownish gray and olive gray (2.5Y and 5Y 8/1-6/1 and 6/2). <u>Very</u> faint distorted and displaced streaked bedding and rare laminations. Regular to irregular, thick to medium parting; irregular fracture. Some thin buff to white, earthy to crystalline stringers and lenses with pyrite. Some very fine dark gray pyritic flecks in middle part. Sample of light olive gray marlstone with fine dark gray flecks from 1050.0 feet: X-ray - dolomite, quartz, feldspar (Na and K), illite; some calcite, pyrite.
1050.3	1050.9	Missing?
Section from 1050.9 to 1057.3 feet not sampled according to lithologic units.		
1050.9	1053.5	Mudstone: buff to buff white (2.5Y 7/2-9/2). Massive to very faint slightly distorted bedding and rare laminations. Very irregular to slightly irregular, thick to thin parting; irregular fracture. Some light to medium olive gray marlstone with thin vuggy crystalline stringers at top.
1053.5	1057.3	Oil shale: medium to dark olive gray (5Y 5/2-3/2 and 3/1), rare brown to buff (2.5Y 4/3-7/2). Very faint distorted to contorted and broken laminations and streaked bedding; a 1-inch displacement at 1055.9 feet. Slightly irregular to very irregular, thin to thick parting; irregular to conchoidal fracture. Common fine buff lenses and streaks. Some very irregular medium to thin, tan to buff earthy tuffs (?) in lower part. Sample of tan earthy tuff with small light to dark gray patches from 1056.7 feet: X-ray - feldspar (albite), some pyrite.
1057.3	1058.5	Oil shale: medium to dark olive gray (5Y 4/2-3/1) and some brown to buff (2.5Y 5/3-7/2). Very faint to distinct, smooth to slightly distorted laminations and streaked bedding. Regular to slightly irregular, thick to medium shaly parting; conchoidal to slightly irregular fracture. Common very fine buff specks and streaks. A 1-inch earthy buff band at top (crushed shale?).
1058.5	1059.9	Marlstone: buff-white to tan and rare medium brownish gray (10YR and 2.5Y 9/2-6/3, rare 5/2; rare slight olive tint). Very faint irregular, distorted and broken to some smooth laminations. Irregular to regular, thick to thin parting; very irregular fracture. Some fine dark brown pyritic spots and rare irregular stringers.

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from Equity Oil Company's Core BX-1--Continued

From	To	Description
		thick to thin parting; conchoidal to very irregular fracture. Some brecciated zones and earthy crushed shale. Some fine calcite specks. Some dark resinous shale with distorted laminations and irregular loop structures in lower 0.4 foot. Very badly broken up and mixed up; true length doubtful.
1074.0	1075.1	Marlstone breccia and some oil shale: buff-white to medium and rare dark brown (2.5Y 9/2-5/3, rare 4/3-3/3). Large angular faintly laminated marlstone fragments in faintly streaked to massive earthy matrix in upper part; moderately distinct very irregular and distorted to fairly smooth laminations and streaked bedding in lower part. Very irregular to slightly irregular, thick to thin parting; irregular fracture. Rare very fine disseminated pyrite in breccia.
1075.1	1076.6	Oil shale: medium to dark brownish gray and brown (2.5Y 4/2 and 4/3-3/2 and 3/3, rare 2/2), some dark olive gray (5Y 3/2-3/1). Faint smooth to slightly distorted laminations with very common fine displacing fractures. Regular to very irregular, thick to thin parting; very irregular fracture. Some very small cavities near top. A thin irregular tan tuff stringer with very small dense dark brown to black cherty lenses and streaks at 1076.4 feet. Sample of tuff (?) with dense dark lenses and streaks from 1076.4 feet: X-ray - dolomite, feldspar (sanidine, albite), pyrite, marcasite.
1076.6	1078.2	Mudstone and marlstone breccia: buff to gray-white (2.5Y 7/2-9/1). Faintly streaked to massive, earthy to chalky mudstone with some very faintly bedded and rare laminated marlstone fragments. Irregular parting and fracture. Rare disseminated pyrite and pyrite streaks.
1078.2	1080.2	Oil shale: medium to dark brownish gray and brown (2.5Y 5/2 and 5/3-3/2). Faint slightly distorted streaked bedding; some dark gray mottling. Irregular parting and fracture. Very common fine yellowish buff earthy spots and streaks.
1080.2	1081.5	Oil shale: light to dark brownish gray and olive gray (2.5Y and 5Y 6/2-3/2 and 3/1; some almost neutral). Faint to moderately distinct regular smooth laminations with common fine irregular displacing fractures. Very regular to very irregular, thick to thin parting; irregular fracture. Some glossy slickensides on fracture surfaces. Some fine buff specks. Some fine dark gray pyritic laminae in lower part.

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from Equity Oil Company's Core BX-1--Continued

From	To	Description
1102.2	1103.8	Marlstone: buff-white to light brownish gray (2.5Y 9/2-6/2). Very faint, smooth to slightly irregular and distorted laminations with common irregular displacing fractures. Very irregular parting and fracture. Rare pyrite and bitumen fracture fillings. Rare small irregular cavities. Badly broken up to pulverized; true length doubtful.
1103.8	1111.0	Missing?
1111.0	1112.4	Oil shale: dark brownish gray, some medium brown near top (2.5Y 2/2-3/2, some 4/3). Faint smooth laminations with rare small loop structures in upper 0.2 foot; very faint distorted to contorted and fractured streaked bedding in lower part. Very irregular parting; very conchoidal to very irregular fracture. Common small to very large irregular vugs (some brown gritty fillings in smaller ones).
1112.4	1113.7	Oil shale: dark to medium olive gray (5Y 3/1-5/1 and 4/2; some almost neutral), rare dark brown to tan near base (2.5Y 3/3-6/3). Very faint smooth to slightly distorted streaked bedding and rare laminations. Regular to slightly irregular thick parting; conchoidal to smooth fracture. Some thin to fine yellowish buff earthy streaks. A smooth vertical fracture with chalky white to gray coatings in upper 0.4 foot.
1113.7	1116.0	Oil shale: medium to rare dark brownish gray and olive gray (2.5Y and 5Y 5/2-4/2, rare 3/2). Faint to moderately distinct, slightly distorted to very irregular distorted and displaced laminations, stringers and streaks. Slightly irregular to very irregular, thick to medium parting; very irregular fracture. Very common thin irregular buff to tan, earthy to very fine granular tuff (?) stringers. Very common irregular vertical fractures with chalky white coatings. A small limonite-stained vug with platy boxworks at top. Sample of oil shale with chalky white fracture coatings from 1114.8 to 1115.1 feet: X-ray - dolomite, K-feldspar, quartz, kaolin?, some pyrite. Sample of thin buff granular tuff from 1115.1 feet: X-ray - magnesite (high background--iron??); some quartz, dolomite, feldspar.

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Laramie Petroleum Research Center, Laramie, Wyoming

January 29, 1965

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from Equity Oil Company's Core BX-1--Continued

From	To	Description
		Moderately distinct regular curved (around vugs) laminations to very faint smooth streaked bedding; faint very irregular and distorted streaks and stringers in rich piece at base. Very irregular to regular, thick to thin parting; irregular to very conchoidal fracture. Some small to large empty nahcolite vugs in upper part. Badly broken up and mixed up; true length doubtful.
1131.0	1133.1	Oil shale: medium to rare dark brownish gray and brown (10YR and 2.5Y 4/2-5/3, rare 3/2-2/2). Faint smooth to slightly distorted and rare curved streaked bedding. Regular to some irregular thick parting; smooth to conchoidal fracture. Rare fine vitreous black streaks. Very rare small buff to tan lenses. A large empty nahcolite vug near base.
1133.1	1137.9	Oil shale: medium to dark brown and brownish gray, some buff (2.5Y 5/3-3/2, some 6/3-7/3). Faint distorted to fairly smooth streaked bedding. Slightly irregular to very irregular, thick to medium parting; slightly irregular to very irregular fracture. Very common fine buff to white specks and streaks. Rare small to medium vugs.
1137.9	1139.8	Oil shale: medium to dark brown and brownish gray in upper part (2.5Y 4/3-3/2, some 5/3 and 2/2); medium brown and rare dark brownish gray in lower part (2.5Y 5/3-4/3, rare 3/2). Faint to very faint, smooth to very irregular, distorted and displaced laminations. Regular to very irregular parting; conchoidal fracture. Some small to medium empty nahcolite vugs in lower part.
1139.8	1141.3	Oil shale: buff to medium brownish gray (2.5Y 7/2-4/2). Faint very irregular and distorted laminations and streaked bedding. Regular to very irregular, thick to medium parting; irregular to very conchoidal fracture. Common fine irregular fractures with chalky white calcite fillings. Some small vugs with chalky white and dark gray fillings.
Section from 1141.3 to 1155.8 feet not sampled according to lithologic units.		
1141.3	1142.6	Oil shale: tan to medium and some dark brown and brownish gray (2.5Y 6/3-4/3, some 3/2). Faint slightly distorted and broadly curved to fairly smooth flat laminations; some loop structures. Slightly irregular to very irregular thick parting; conchoidal and some very irregular fracture. Some very fine irregular calcite-filled fractures in upper part. Very rare small dark gray nodules and fine streaks.

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from Equity Oil Company's Core BX-1--Continued

From	To	Description
		irregular thick to medium parting; conchoidal to fairly smooth fracture. Some very fine white calcite streaks and fracture fillings in upper part. Rare thin buff gritty stringers with limonite stains and small gray blebs in middle and lower parts.
1158.8	1160.8	Oil shale: dark brown and brownish gray (10YR 3/3-3/2, some 2/2); some very fine resinous to vitreous black streaks. Very faint smooth to distorted streaked bedding. Slightly irregular thick parting; slightly conchoidal to fairly smooth fracture. Rare thin dark gray to dark brownish gray gritty stringers and small patches with some fine white specks and pyrite.
1160.8	1161.9	Oil shale: dark brownish gray (10YR 3/2-2/2); some very fine resinous to waxy streaks. Very faint distorted to smooth streaked bedding. Slightly irregular to regular thick parting; fairly smooth to slightly conchoidal fracture. Rare thin to medium, dark brownish gray fine crystalline stringers and lenses. Sample of shale with dark brownish gray crystalline lens from 1161.4 feet:
1161.9	1165.3	X-ray - dolomite; some quartz, cryolite, dawsonite. Oil shale: dark brownish gray (10YR 3/2-2/2), some medium brown to tan in upper part (2.5Y 4/3-6/3); rare very fine resinous to waxy streaks. Very faint distorted to smooth streaked bedding; some moderately distinct very irregular and distorted to fairly smooth laminations in upper part; very faint smooth laminations in lower 0.1 foot. Regular to some irregular thick parting; slightly conchoidal to smooth fracture. Some small irregular lenses and thin to thick stringers of dark gray and brownish gray to buff gritty material in upper part.
1165.3	1167.9	Oil shale: dark brownish gray and rare dark brown (10YR 2/2, some 3/2, rare 3/3). Very faint smooth streaked bedding and laminations; a 0.2-foot zone of very contorted and truncated laminations and stringers at 1165.7 feet. Regular to rare irregular thick parting; smooth to slightly conchoidal fracture. Very rare fine vitreous black streaks and small lenses.
1167.9	1171.9	Oil shale: buff to medium brownish gray, some dark brown and brownish gray in upper part (2.5Y and 10YR 7/2-5/2, rare 8/2 and 4/2, some 3/3-2/2 in upper part). Very faint to rare moderately distinct, smooth to slightly distorted and some commonly displaced laminations. Very

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from Equity Oil Company's Core BX-1--Continued

From	To	Description
1186.0	1188.0	Oil shale: medium to dark brownish gray (2.5Y and 10YR 5/2-3/2, rare 2/2); some resinous to waxy luster. Very faint to faint, distorted to contorted laminations and streaked bedding; some irregular unconformable stringers. Very irregular to some slightly irregular, thick to medium parting; irregular to very conchoidal fracture. Some irregular fractures with chalky calcite.
1188.0	1191.9	Oil shale: buff and tan to medium and rare dark brownish gray (2.5Y and 10YR 7/2 and 6/3-5/2, rare 4/2-3/2). Moderately distinct to very faint, very irregular, distorted and displaced to smooth laminations; common loop structures in upper part. Very irregular to some very regular, thick to medium parting; irregular to conchoidal and some smooth fracture. Common irregular fractures with chalky coatings (some slightly open). Rare large vugs in upper part. Some thin yellowish buff earthy stringers with very fine dark specks in lower part. Middle part very badly broken up and mixed up; true length doubtful. Sample of yellowish buff friable earthy stringer from 1191.0 feet: X-ray - dolomite, quartz, feldspar (K and Na).
1191.9	1193.9	Oil shale: medium to dark brown and brownish gray (10YR and 2.5Y 5/3-3/2). Faint very distorted streaked bedding to very faint fairly smooth laminations. Slightly irregular to very irregular thick parting; irregular to conchoidal and some fairly smooth fracture. Common small to large limonite-stained vugs with some gray crusts and buff earthy fillings.
1193.9	1194.9	Oil shale: medium to dark brown and brownish gray (10YR 4/3-3/2, rare 2/2); rare fine resinous streaks. Faint to moderately distinct distorted streaked bedding. Irregular thick parting; smooth to slightly irregular and conchoidal fracture. Common small irregular vugs with buff gritty to earthy fillings.
1194.9	1195.9	Oil shale: medium to dark brown and brownish gray, rare brownish black (10YR and 2.5Y 4/3-2/2, some 5/3, rare 1/2); some resinous and rare waxy luster. Faint irregular distorted laminations and some streaked bedding; common small to moderately large loop structures and displacements. Regular to slightly irregular, thick to medium shaly parting; conchoidal fracture. Some thin irregular buff to dark

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from Equity Oil Company's Core EX-1--Continued

From	To	Description
		parting; very conchoidal to irregular fracture. Some fractures with chalky coatings. Rare small to fine buff to tan lenses and streaks.
1216.0	1220.5	Oil shale: dark and rare medium brownish gray (10YR 3/2-2/2, rare 2.5Y 4/2-5/2 in upper part). Very faint smooth to some distorted streaked bedding; a 2-inch band of smooth laminations at 1216.3 feet. Regular to rare irregular thick parting; slightly irregular to conchoidal and some smooth fracture. Very rare fine vitreous black specks and streaks.
1220.5	1222.2	Oil shale: medium brownish gray and brown (10YR and 2.5Y 5/2-4/2 and 4/3). Very faint smooth laminations and some streaked bedding. Regular to slightly irregular thick shaly parting; conchoidal fracture. Some very fine chalky white stringers at 1221.2 feet.
1222.2	1226.3	Oil shale: dark brownish gray to rare dark brown and brownish black (10YR 2/2-3/2, rare 3/3 and 1/2); very common satiny to resinous luster. Very faint smooth streaked bedding; very uniform. Regular to slightly irregular thick parting; conchoidal fracture. Very rare small brown to gray pyritic lenses.
1226.3	1228.5	Oil shale: dark brownish gray to brownish black, some dark to medium brown in lower part (10YR 3/2-1/2, some 3/3-4/3); very common satiny to resinous luster--some waxy in upper part. Faint slightly irregular and distorted laminations with some loop structures in upper part to distorted streaked bedding in lower part. Very irregular to slightly irregular thick parting; conchoidal fracture. Some small brown crystalline lenses in lower part.
1228.5	1229.7	Oil shale: tan to some dark brown and brownish gray (2.5Y and 10YR 6/3-4/3, some 3/3-3/2), rare satiny to resinous luster. Moderately distinct to very faint, distorted and displaced laminations and streaked bedding; very common small irregular loop structures. Slightly irregular thick parting; slightly irregular to conchoidal fracture. Some thin buff earthy to very fine crystalline streaks and lenses.
1229.7	1230.9	Oil shale: dark brownish gray (10YR 3/2-2/2); some satiny luster. Very faint smooth to distorted streaked bedding. Slightly irregular thick parting; fairly smooth to conchoidal fracture. Some <u>very</u> -fine disseminated crystals and rare very small brown crystalline patches.

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from Equity Oil Company's Core BX-1--Continued

From	To	Description
1246.0	1247.5	Oil shale: dark to some medium brown and brownish gray (10YR 3/3-2/2, some 4/2); some satiny luster. Very faint smooth to slightly distorted streaked bedding and rare laminations. Regular to some irregular, thick to thin shaly parting; smooth to conchoidal fracture. Some very thin irregular buff earthy stringers with small black to gray blebs and some limonite stains. Rare thin flat vugs.
1247.5	1250.7	Oil shale: dark brownish gray and rare brownish black (10YR 2/2, some 3/2, rare 1/2); common satiny luster and some resinous to waxy luster in lower part. <u>Very</u> faint smooth to distorted streaked bedding; some slightly distorted laminations with loop structures near base. Regular to some very irregular thick parting; conchoidal to smooth fracture. Common very fine disseminated crystals in upper part. A large angular dense brown dolomite inclusion with unconformable laminations at 1249.4 feet. Some small brown to tan lenses and streaks in lower part.
1250.7	1251.8	Oil shale: medium to dark brownish gray and brown, rare brownish black (10YR 4/2 and 4/3-3/2 and 3/3, rare 2/2-1/2); rare satiny to waxy luster. Faint slightly distorted to smooth laminations and streaked bedding; some very small loop structures. Slightly irregular thick parting; slightly irregular to slightly conchoidal fracture. Some small to fine, brown to buff crystalline lenses, streaks and stringers--some with pyrite. Rare smooth diagonal fractures with slight chalky coatings in upper part.
1251.8	1255.2	Oil shale: medium to dark brownish gray and rare brownish black (10YR 4/2-2/2, rare 1/2); common satiny luster and fine resinous to waxy streaks. Very faint slightly distorted to some slightly contorted streaked bedding; some very faint laminations with small irregular loop structures near base. Slightly irregular to very irregular thick parting; fairly smooth to conchoidal fracture. Some medium to very large empty nahcolite vugs (rare earthy to spongy, buff to white fillings). Common very small brown to buff, fine crystalline to earthy lenses and fine streaks in upper part. A thick irregular light brownish gray earthy stringer at 1255.0 feet. Sample of oil shale with very small buff crystalline lenses and fine streaks from 1252.3 feet: X-ray - quartz, dolomite, feldspar (Na and K), some dawsonite.

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from Equity Oil Company's Core BX-1--Continued

From	To	Description
		luster. Moderately distinct to very faint, irregular and distorted to some contorted laminations; common small to fairly large loop structures and displacements in upper part. Very irregular thick parting; very conchoidal to irregular fracture.
1272.0	1274.3	Oil shale: medium to dark and rare light brownish gray and brown (10YR and 2.5Y 5/2 and 5/3-3/2, rare 6/2). Very faint smooth to slightly distorted laminations. Very irregular to slightly irregular, thick to medium parting; conchoidal fracture. Some vugs and earthy porous crushed zones. Very badly broken up and mixed up; true length doubtful.
1274.3	1276.9	Oil shale: dark and rare medium brownish gray (10YR and 2.5Y 3/2-3/1, some 2/1, rare 4/2). <u>Very</u> faint smooth laminations and streaked bedding. Regular and rare irregular thick parting; very smooth to slightly conchoidal fracture. Some very fine disseminated crystals near top. A thin irregular medium to light brownish gray crystalline tuff stringer with some very small dark brown patches at 1274.6 feet. Very uniform and featureless. Sample of thin brownish gray crystalline tuff stringer from 1274.6 feet: X-ray - dawsonite, feldspar (albite), quartz; some cryolite?, ferroan? Sample of very faintly laminated featureless oil shale from 1276.1 feet: X-ray - quartz; some dawsonite, dolomite, ferroan, feldspar (Na and K).
1276.9	1278.0	Oil shale: medium to dark brownish gray (10YR 4/2-3/2, rare 2/2). Faint smooth laminations; rare small loop structures and displacements. Regular to some irregular thick parting; conchoidal to smooth fracture. Some irregular fractures with slight chalky coatings. Rare very fine buff streaks in middle part. Rare small gray discolored mottles near base.
1278.0	1280.0	Oil shale: medium to dark brownish gray and brown (10YR 5/2 and 5/3-3/2, rare 2/2). Faint smooth to slightly irregular and distorted laminations. Regular to irregular thick parting; smooth to irregular fracture. Some very fine platy crystals on parting surfaces (dawsonite?). Some irregular fractures with very slight chalky coatings. A thin dense brown dolomite band at

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from Equity Oil Company's Core BX-1--Continued

From	To	Description
1292.7	1296.3	Oil shale: dark to rare medium brownish gray and some brown (10YR 3/2-2/2, some 3/3, rare 4/2-4/3). Very faint smooth to some slightly distorted laminations; rare loop structures and displacements in middle part. Very regular to rare irregular thick parting; very smooth to conchoidal fracture. Some <u>very</u> fine disseminated crystals. Some diagonal fractures with very slight gray coatings and rare resinous brown to black organic material.
1296.3	1299.6	Marlstone and oil shale: buff to medium brownish gray and some medium brown (10YR and 2.5Y 7/2-5/2, some 5/3, rare 4/2). Faint to fairly distinct, slightly distorted to very irregular, distorted and displaced laminations. Regular to some irregular, thick to medium shaly parting; conchoidal to irregular fracture. Common small to fine buff earthy lenses and streaks in upper half.
1299.6	1301.9	Oil shale: tan to medium brown and brownish gray, some buff (10YR and 2.5Y 6/3-4/3 and 4/2, some 7/2). Fairly distinct to faint, smooth to slightly distorted laminations. Regular to rare irregular, thick to thin shaly parting; conchoidal to very irregular fracture. Common fine cavities and earthy to gritty porous zones; some small vugs with buff to dark gray earthy to gritty fillings showing radial structure.
1301.9	1303.0	Oil shale: medium to dark brown and some brownish gray (10YR 4/3-3/3, some 4/2-3/2). Faint to very faint, smooth to slightly distorted laminations and streaked bedding. Regular to slightly irregular thick parting; conchoidal fracture. Rare fine cavities and thin gritty porous zones.
1303.0	1308.0	Oil shale: dark brownish gray and brown (10YR 3/2-3/3). Very faint smooth to distorted laminations and streaked bedding. Slightly irregular to very irregular thick parting; conchoidal to irregular fracture. Common small to rare moderately large limonite-stained vugs with radial boxworks and some pyrite.
1308.0	1309.7	Oil shale: dark brownish gray and some dark brown (10YR 3/2-2/2, some 3/3). Very faint smooth to slightly distorted laminations and streaked bedding; some small loop structures near base. Slightly irregular to very irregular thick parting; very conchoidal fracture. Rare

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from Equity Oil Company's Core BX-1--Continued

From	To	Description
1335.0	1336.0	Oil shale: medium to some dark brown and brownish gray, rare tan to buff (10YR 5/3-4/3, some 3/3-2/2, rare 6/3-7/2). Very faint to faint, distorted to fairly smooth laminations and streaked bedding. Very irregular to slightly irregular, medium to thick parting; conchoidal to smooth fracture.
1336.0	1341.0	Oil shale: tan to some dark brown and brownish gray (10YR 6/3-4/3, some 3/3-3/2 in middle part); rare fine resinous streaks in middle part. Fairly distinct to some faint, smooth to curved laminations; distorted to smooth streaked bedding from 1338.2 to 1339.0 feet. Regular to some very irregular thick parting; conchoidal to fairly smooth fracture. Some small to large vugs with radial boxworks and dark gray pyritic rims (laminae curved around vugs). Rare thin earthy to fine crystalline, buff to tan stringers and streaks near base.
1341.0	1343.0	Oil shale: medium to some dark brownish gray and brown (10YR 5/2 and 5/3-4/2 and 4/3, some 3/2). Faint slightly distorted to smooth laminations and some <u>very</u> faint bedding. Regular to some irregular thick parting; smooth to conchoidal fracture. Some <u>very</u> fine disseminated crystals. Rare thin buff to tan crystalline stringers in upper part.
1343.0	1345.0	Oil shale: medium to dark brownish gray and brown (10YR 4/2 and 4/3-3/3, rare 2/2). Very faint slightly distorted to some smooth laminations and streaked bedding. Slightly irregular thick parting; slightly conchoidal to smooth fracture. Some very fine disseminated crystals and very thin brown to brownish gray crystalline stringers and streaks. A thin irregular and broken, gray to brownish gray silty-textured stringer at 1344.2 feet. Sample of oil shale with gray to brownish gray silty stringer from 1344.2 feet: X-ray - feldspar (albite), pyrite; some dawsonite, magnesite, quartz, dolomite.
1345.0	1349.0	Oil shale: dark brownish gray and rare dark brown (10YR 3/2-2/2, rare 3/4); common fine resinous to waxy black streaks. Very faint distorted to some fairly smooth streaked bedding. Slightly irregular to some very regular thick parting; smooth to slightly conchoidal fracture. Streaks commonly have faint internal laminations.

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Laramie Petroleum Research Center, Laramie, Wyoming

January 29, 1965

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from Equity Oil Company's Core BX-1--Continued

From	To	Description
1359.0	1360.0	Oil shale: dark to rare medium brownish gray and brownish black (10YR 3/2-2/2, rare 4/2 and 1/2); common fine resinous streaks. Very faint slightly distorted streaked bedding. Irregular thick parting; conchoidal fracture.
1360.0	1365.0	Oil shale: dark brownish gray (10YR 3/2-2/2); some to common resinous luster. Slightly distorted laminations and streaked bedding; some loop structures. Very irregular parting; very conchoidal, commonly spiral fracture. Very badly broken up into irregular curved plates; true sample lengths doubtful. Sample of very rich oil shale with spiral fracture from 1363.0 feet: X-ray - quartz, dawsonite; some dolomite, pyrite, feldspar (Na and K), illite.
1365.0	1367.3	Oil shale: dark brownish gray to brownish black (10YR 3/2-1/2); very common resinous and rare waxy luster. Faint to very faint irregular distorted laminations; very common loop structures and displacements. Regular to some irregular thick parting; very conchoidal fracture. Very rare very fine pyrite streaks and blebs. A small black woody plant fossil at 1366.6 feet.
1367.3	1368.3	Oil shale: medium brownish gray and brown to brownish black (10YR 4/2 and 4/3-1/2); some satiny luster in lower part. Faint to very faint, irregular and distorted to fairly smooth laminations and streaked bedding; some loop structures. Slightly irregular to regular thick parting; slightly conchoidal fracture. Some small tan dolomite lenses or inclusions in middle part.
1368.3	1368.7	Marlstone and some oil shale: buff to tan and some medium to dark brown (2.5Y 7/3-6/3, some 5/3-3/2). Distinct contorted and broken stringers and some laminations. Slightly irregular parting and fracture. Rare very small dark brown crystalline blebs. Sample of buff to tan marlstone from 1368.6 feet: X-ray - dolomite; trace quartz, feldspar.
1368.7	1373.0	Oil shale: dark brownish gray to brownish black, rare dark to medium brown in upper part (10YR 2/2-1/2, rare 3/3-5/3); very common fine resinous to waxy streaks. <u>Very</u> faint slightly distorted streaked bedding and rare laminations. Slightly irregular thick parting; smooth to conchoidal fracture.

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Laramie Petroleum Research Center, Laramie, Wyoming

January 29, 1965

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from Equity Oil Company's Core BX-1--Continued

From	To	Description
1379.0	1382.0	Oil shale: dark brownish gray, rare brownish black near top (10YR 3/2-2/2, rare 1/2); some slight satiny to rare resinous luster. <u>Very</u> faint smooth to slightly distorted laminations; some very small loop structures and displacements in lower part. Slightly irregular medium to thick shaly parting; slightly conchoidal to rare irregular hackly fracture.
1382.0	1384.0	Oil shale: dark brownish gray to brownish black and rare dark brown (10YR 2/2-1/2, rare 3/1-3/3); almost all have satiny to resinous and rare waxy luster. Very faint to faint slightly distorted laminations and streaked bedding; very common small irregular loop structures. Slightly irregular medium to thick shaly parting; conchoidal to some slight hackly fracture. Very rare very fine pyrite streaks and blebs in upper part. Some fine tan lenses or inclusions near base. abrupt but indistinct color change at base.
1384.0	1385.0	Oil shale: tan to medium brownish gray (2.5Y 6/3-5/2). Faint to very faint irregular distorted laminations and some streaked bedding; very common irregular loop structures and displacements in upper part. Regular to some irregular thick parting; smooth to conchoidal fracture. Some thin irregular dark brownish gray to black crystalline nahcolite (?) stringers in lower part. Sample of thin crystalline stringer in lean oil shale from 1384.7 feet: X-ray - cryolite, nahcolite, dawsonite; some quartz?, calcite?
1385.0	1386.1	Oil shale: tan to brown (10YR and 2.5Y 6/3-4/3). Faint to moderately distinct irregular distorted laminations; some irregular loop structures. Regular to some irregular thick parting; smooth to slightly irregular fracture. Common thin to thick (up to 1 inch) massive crystalline nahcolite stringers.
1386.1	1387.2	Oil shale: dark and rare medium brownish gray (10YR 3/2, rare 4/2 and 2/2). Very faint smooth to slightly distorted streaked bedding. Slightly irregular thick parting; slightly irregular fracture. Rare thin to fine dark brownish gray streaks with some very fine medium gray streaks. Some irregular massive crystalline nahcolite lenses in lower part (up to 3/4- x 2-1/4 inches). Rare very fine resinous to vitreous streaks.

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from Equity Oil Company's Core BX-1--Continued

From	To	Description
1397.9	1400.0	Oil shale: medium to dark brown and brownish gray (10YR and 2.5Y 4/3-3/2, some 2/2, rare 5/3). Very faint slightly distorted to smooth streaked bedding. Regular to slightly irregular thick parting; smooth to slightly conchoidal fracture. A small black woody plant fossil on parting surface near top. A very thin dark brown to black crystalline streak at 1398.3 feet.
1400.0	1402.3	Oil shale: tan to medium brown (10YR 6/3-4/3); a 0.2-foot zone of dark brown and brownish gray at 1401.2 feet (10YR 3/3-3/2, rare 2/2). Faint slightly distorted to smooth streaked bedding in upper part; faint to moderately distinct, slightly irregular and distorted laminations with some loop structures in lower part. Slightly irregular thick parting; smooth to slightly irregular and conchoidal fracture. Some thin irregular dark brownish gray fine crystalline stringers, with very small white crystalline masses and pyrite in dark zone at 1401.3 feet. Sample of shale with crystalline stringers and patches from 1401.3 feet: X-ray - quartz, dawsonite; some pyrite, dolomite, Na-feldspar.
1402.3	1407.6	Oil shale: dark brownish gray, some dark brown near top (10YR 3/2-2/2, some 3/3). Very faint fairly smooth streaked bedding. Slightly irregular thick parting; smooth to slightly irregular fracture. Common very fine disseminated dawsonite.
1407.6	1409.6	Oil shale: dark brownish gray and rare dark brown, some brownish black in lower part (10YR 2/2-3/2, some 1/2, rare 3/3); some satiny luster in lower part. Very faint smooth to some irregular distorted laminations; common fairly large irregular loop structures and displacements near base. Slightly irregular thick parting; smooth to conchoidal fracture. A fairly large very irregular branching massive pyrite mass at top. A thin irregular dense to very fine crystalline dark brownish gray tuff stringer near base.
1409.6	1410.6	Oil shale: dark to medium brownish gray and some brown (10YR and 2.5Y 3/2-4/2, some 4/3, rare 2/2 near top). Very faint slightly distorted laminations. Slightly irregular thick parting; slightly conchoidal to smooth fracture. Some to common fine disseminated dawsonite crystals. Rare very faint gray discolorations. Very rare very fine brown crystalline streaks. Very dense and heavy.

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from Equity Oil Company's Core BX-1--Continued

From	To	Description
		small irregular dark brown to tan finely crystalline patches and streaks--some near top have common very fine pyrite crystals. Some very fine disseminated crystals.
1425.6	1426.4	Oil shale: medium to dark brown and brownish gray, rare tan and brownish black (10YR and 2.5Y 5/3-2/2, rare 6/3 and 1/2). Fairly distinct irregular distorted laminations, stringers and streak; rare irregular loop structures. Slightly irregular to irregular thick parting; slightly conchoidal and some slight hackly fracture. Common small to fine, brown to buff, finely crystalline to porous earthy lenses and streaks.
1426.4	1430.0	Oil shale: dark to rare medium brownish gray and brown, rare brownish black near top and bottom (10YR and 2.5Y 3/2 and 3/3-2/2, rare 4/2-4/3 and 1/2). Very faint slightly distorted to some smooth streaked bedding; some laminations near top and bottom. Slightly irregular to irregular thick parting; slightly irregular to conchoidal fracture. Common small irregular brown crystalline and rare buff earthy patches and streaks. Sample of shale with small brown crystalline patches and streaks from 1428.4 feet:
1430.0	1432.2	X-ray - quartz, dawsonite; some dolomite, Na-feldspar. Oil shale: dark brownish gray to brownish black (10YR 2/2 and 2/1-1/1) and neutral black (2-1.5N). <u>Very faint</u> slightly irregular and distorted to smooth laminations. Slightly irregular to very regular, thick to some medium shaly parting; slightly conchoidal and rare irregular fracture. Very common fine platy dawsonite crystals concentrated in fine laminae and streaks. Very rare fine massive pyrite streaks in lower part.
1432.2	1433.9	Oil shale: dark brownish gray, some dark brown in lower part (10YR 3/2-2/2, some 3/3). <u>Very faint</u> to faint, fairly smooth to irregular distorted laminations; some small to medium irregular loop structures in lower part. Irregular to slightly irregular thick parting; irregular to slightly conchoidal fracture.
1433.9	1435.9	Oil shale: dark to rare medium brownish gray and brown (10YR and 2.5Y 3/1 and 3/3-2/2, rare 4/3-5/3; some almost neutral); some satiny luster in lower part. Very faint to faint distorted streaks, lenses, stringers and rare laminations. Slightly irregular thick parting; slightly irregular and conchoidal to some irregular coarse hackly fracture. Some small irregular brown to tan crystalline lenses and streaks.

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from Equity Oil Company's Core BX-1--Continued

From	To	Description
1443.0	1445.0	Oil shale: dark brownish gray (10YR 3/2 and 3/1-2/1). Very faint very smooth laminations. Regular to slightly irregular thick parting; conchoidal fracture. Some very fine disseminated dawsonite. Very rare plant fossils.
1445.0	1447.0	Oil shale: dark brownish gray (10YR 3/2-2/1; some almost neutral). Very faint very smooth to some slightly distorted and displaced laminations. Regular to some irregular, thick to medium parting; conchoidal to some irregular fracture. Rare thin dense dark brown dolomite stringers. Two thin irregular displaced gray stringers at 1446.3 to 1446.4 feet (upper one dark gray, very fine silty-textured, pyritic (?); lower one medium to light gray, dense to very fine crystalline).
1447.0	1450.0	Oil shale: medium to dark brownish gray (10YR 4/1 and 4/2-3/1 and 3/2, some 2/1 in upper part). Very faint very smooth to some slightly distorted laminations. Regular to some irregular thick parting; conchoidal to some smooth fracture. Rare vertical fractures with resinous brown to black coatings and irregular buff earthy patches.
1450.0	1452.0	Oil shale: medium to dark brownish gray (10YR 4/2-3/2 and 3/1). Very faint smooth to slightly distorted laminations and streaked bedding. Very irregular to some regular, thick to medium parting; irregular to conchoidal fracture. Some vertical fractures with resinous brown to black coatings and small buff patches in upper part. Some irregular dense brown dolomite stringers in middle part.
1452.0	1453.0	Oil shale: medium to dark brownish gray (10YR 4/2-3/2 and 3/1, rare 5/2). Very faint to faint, slightly irregular and distorted laminations; very common small loop structures and displacements. Slightly irregular thick parting; slightly irregular and rare irregular hackly fracture.
1453.0	1457.0	Oil shale: medium to dark brownish gray (10YR 4/2-3/2 and 3/1). Very faint slightly irregular and distorted laminations and streaked bedding; some small loop structures and displacements. Slightly irregular to irregular thick parting; conchoidal to irregular and rare hackly fracture. Rare vertical fractures with earth buff patches.
Section from 1458.9 to 1466.6 feet not sampled according to lithologic units.		

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Laramie Petroleum Research Center, Laramie, Wyoming

January 29, 1965

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from Equity Oil Company's Core BX-1--Continued

From	To	Description
1465.0	1466.4	Oil shale: tan to medium and rare dark brownish gray (10YR 6/3-4/2, rare 3/2). Moderately distinct irregular and slightly distorted to some slightly contorted laminations; some small loop structures and common displacements. Slightly irregular thick parting; irregular to conchoidal fracture. Some medium to thin very faintly streaked interfingering dolomite or marlstone stringers in lower part.
1466.4	1468.6	Oil shale: light to medium brownish gray (10YR 6/2-4/2). Moderately distinct to faint smooth laminations; common small loop structures and displacements. Regular to slightly irregular; thick to medium shaly parting; slightly conchoidal fracture.
1468.6	1470.6	Oil shale: light to medium and very rare dark brownish gray (10YR 6/2-4/2, rare 3/2). Very faint distorted streaked bedding in upper part to faint slightly distorted and commonly displaced laminations in lower part. Irregular to slightly irregular, thick to medium parting; slightly irregular to conchoidal fracture. A smooth vertical fracture with some fine irregular calcareous crusts near base.
1470.6	1473.2	Oil shale: medium to dark brownish gray (10YR 4/2-3/2, some 5/2). Very faint smooth to irregular distorted laminations and some streaked bedding. Slightly irregular to irregular thick parting; slightly conchoidal to irregular fracture. Very rare fine resinous to vitreous black streaks. A black woody (?) plant fossil on parting surface at 1472.5 feet.
1473.2	1476.5	Oil shale: medium to rare dark brownish gray and some medium brown to tan (10YR 5/2-4/2, some 5/3-6/3, rare 3/2). Very faint to some moderately distinct slightly irregular, distorted and commonly displaced laminations to some very faint distorted streaked bedding. Regular to rare irregular thick parting; slightly irregular and conchoidal to smooth fracture.
1476.5	1477.6	Oil shale: buff and tan to medium brownish gray (10YR 7/2 and 6/3-5/2, rare 4/2). Very faint and rare distinct, fairly smooth to distorted laminations and streaked bedding. Slightly irregular to irregular thick parting; smooth to slightly conchoidal fracture. Some very fine irregular dark brown to black streaks.

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from Equity Oil Company's Core BX-1--Continued

From	To	Description
1487.1	1488.1	Oil shale: buff and tan to medium and rare dark brown (10YR 7/2 and 6/3-4/3, rare 3/3). Distinct slightly irregular and distorted to some slightly contorted laminations. Regular to some irregular, medium to thick parting; slightly irregular fracture. Some thin buff to brown, dense to slightly sparry crystalline bands, stringers and lenses. A fine fairly smooth vertical fracture with crystalline calcite filling runs from 1487.4 to 1487.8 feet.
1488.1	1491.0	Oil shale: medium to some dark brown (10YR 4/3, some 5/3-3/3). Very faint distorted to some fairly smooth streaks and stringers. Slightly irregular to irregular thick parting; slightly irregular to slightly conchoidal fracture. Some very small irregular dark brown crystalline patches and streaks (some strongly oil-impregnated in lower part). Some small to medium dense brown dolomite lenses and stringers. A few medium to fairly large very irregular buff to tan crystalline lenses and stringers in lower part--some with fine irregular black pyritic rims. Sample of buff crystalline lens from 1490.9 feet: X-ray - quartz, dawsonite, calcite, dolomite, trace Na-feldspar.
1491.0	1495.0	Oil shale: medium to rare dark brown and buff (10YR 5/3-4/3, rare 3/3 and 6/3-7/2). Very faint slightly distorted to smooth laminations and some streaked bedding; some very small loop structures and displacements. Regular to some very irregular thick parting; conchoidal to smooth fracture. Some thin dense brown dolomite stringers and lenses. Two very irregular medium to thin yellowish brown oil-stained dense and rare sparry stringers at 1493.7 and 1494.7 feet--common very fine black blebs in lower one. Some thin to fine brownish gray finely crystalline stringers with some pyrite in lower part.
1495.0	1501.6	Oil shale: medium to dark brown (10YR 4/3-3/3, rare 4/4). Very faint distorted to fairly smooth streaked bedding. Slightly irregular to irregular thick parting; slightly irregular to slightly conchoidal fracture. Some fine to thin irregular dark brown and brownish gray crystalline stringers. Some small to medium dense brown to tan dolomite lenses. Some small to large dark brown coarsely crystalline radiating nahcolite masses at 1497.7, 1498.0-1498.8, and 1500.5-1500.7 feet.

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from Equity Oil Company's Core BX-1--Continued

From	To	Description
1514.0	1516.0	Oil shale: medium brownish gray and brown (10YR and 2.5Y 5/2-5/3). <u>Very</u> faint very distorted to some fairly smooth streaked bedding. Irregular thick parting; conchoidal to irregular fracture. Some small to moderately large irregular, dense to fine crystalline nahcolite masses. Some fine brown crystalline patches (like 1510.4 feet).
1516.0	1517.0	Oil shale: tan to medium brown and brownish gray (10YR and 2.5Y 6/3-5/3 and 5/2). Very faint fairly smooth to distorted streaked bedding. Irregular thick parting; very conchoidal to irregular fracture. Some small to medium, radial to massive crystalline nahcolite masses.
1517.0	1518.1	Oil shale: medium brownish gray and brown (10YR and 2.5Y 5/2-5/3). <u>Very</u> faint slightly distorted streaked bedding. Irregular thick parting; very conchoidal fracture. Common fine brown crystalline patches and some very small radiating nahcolite masses.
1518.1	1520.5	Oil shale: tan and rare buff to medium brownish gray and brown (10YR and 2.5Y 6/3-5/2 and 5/3, rare 7/2). Very faint to moderately distinct, fairly smooth to distorted laminations and streaked bedding. Slightly irregular to some very irregular thick parting; smooth to slightly irregular fracture. Rare thin irregular dense brownish gray dolomite stringers. Some very irregular 1- to 1-1/2-inch coarsely crystalline nahcolite masses and coarse disseminated crystals at 1518.1 and 1519.0-1519.3 feet. Some thin to medium very irregular, fine to moderately coarse crystalline nahcolite stringers at 1519.9-1520.0 feet.
1520.5	1525.3	Oil shale: medium brownish gray and brown to some tan (10YR and 2.5Y 5/2-5/3, some 6/3). Very faint to rare moderately distinct very distorted streaks, stringers and rare laminations. Slightly irregular to very irregular thick parting; slightly conchoidal to irregular fracture. Small to 2-inch coarsely crystalline to rare fine massive crystalline nahcolite masses at 1520.8, 1521.5, 1522.3, 1523.8, 1524.7, 1525.0, and 1525.2 feet.
1525.3	1527.3	Oil shale: tan and rare buff to medium brown (2.5Y 6/3-5/3, rare 7/3 and 4/3). Very faint distorted streaks and stringers to moderately distinct, slightly distorted and commonly displaced laminations with common small irregular loop structures. Irregular to some slightly irregular thick parting; slightly irregular and conchoidal

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from Equity Oil Company's Core BX-1--Continued

From	To	Description
1536.5	1537.5	Oil shale: medium brown to dark brownish gray (10YR 4/3-3/2, rare 3/1). <u>Very</u> faint slightly distorted streaked bedding. Irregular to some regular thick parting; conchoidal fracture.
1537.5	1538.3	Oil shale: dark brownish gray (10YR 3/2-2/2). <u>Very</u> faint slightly distorted laminations and streaked bedding. Irregular thick parting; conchoidal fracture.
1538.3	1538.7	Nahcolite and some oil shale: brown to black coarsely crystalline nahcolite with some irregular stringers of dark brownish gray and brown (10YR 3/2 and 3/3-2/2) oil shale.
1538.7	1540.7	Oil shale: dark brown and brownish gray (10YR 3/3 and 3/2-2/2, some 3/1). Faint to <u>very</u> faint, very distorted to fairly smooth streaks, stringers and rare laminations. Very irregular thick parting; irregular to conchoidal fracture. Some fairly large very irregular to feathery masses of dark brown to black, bitumen-impregnated, very pyritic crystalline stringers. Sample of oil shale with very common thin feathery pyrite and crystalline stringers from 1540.1 feet: X-ray - pyrite; some dawsonite, quartz.
1540.7	1545.0	Oil shale: dark brownish gray and rare medium brown (10YR 3/2 and 3/1-2/2, rare 4/3-5/3). <u>Very</u> faint smooth laminations and streaked bedding. Very irregular parting; very conchoidal to spiral fracture. Rare feathery masses of very fine chalky white stringers. Very badly broken up and mixed up; true length doubtful.
1545.0	1546.0	Oil shale: medium to dark brownish gray and brown, rare tan (10YR and 2.5Y 5/2 and 5/3-3/2 and 3/3, rare 6/3). Very faint distorted streaked bedding to faint slightly distorted and displaced laminations. Very irregular to slightly irregular thick parting; very conchoidal to irregular fracture. Upper part badly broken up; true length doubtful.
1546.0	1549.3	Oil shale: tan and buff to medium and rare dark brownish gray and brown (2.5Y 7/2 and 6/3-4/2 and 4/3, rare 3/3; some slight olive tint). Fairly distinct to faint, slightly irregular and distorted laminations with common loop structures and displacements to some very distorted stringers and streaks. Slightly irregular to irregular thick parting; slightly irregular and conchoidal fracture. A 2- x 4-inch very coarsely crystalline nahcolite mass at 1547.1 feet; a very large very coarsely crystalline nahcolite mass at 1548.5-1549.0 feet.

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from Equity Oil Company's Core BX-1--Continued

From	To	Description
1568.1	1577.0	Oil shale: dark brownish gray (10YR 3/2 and 3/1-2/1); some slight satiny to rare resinous luster in upper 2.7 feet. Very faint slightly distorted to smooth laminations and streaked bedding. Irregular to rare very smooth, thick to medium parting; slightly conchoidal to irregular fracture. A 1- x 2-inch dense brown dolomite lense at 1570.7 feet.
1577.0	1580.0	Oil shale: dark to medium brownish gray (2.5Y 3/2 and 3/1-4/2 and 4/1). Very faint slightly distorted streaked bedding and rare laminations. Irregular to slightly irregular thick parting; irregular fracture. Rare very faint dark gray discolored streaks in upper part. Rare fine buff silty to earthy streaks in lower part--some with pyrite.
1580.0	1581.2	Oil shale: medium brownish gray (2.5Y 5/2-4/2, some 4/1). Very faint slightly distorted streaked bedding. Irregular thick parting; irregular to some fairly smooth fracture. Common very small buff silty to earthy spots and streaks--some with pyrite.
1581.2	1584.8	Oil shale: medium brownish gray and brown (2.5Y 5/2-5/3, rare 4/2). Very faint very distorted to fairly smooth streaked bedding; some almost massive in lower part. Irregular to slightly irregular thick parting; irregular to conchoidal and some fairly smooth fracture. Some small irregular buff to brown, earthy to fine crystalline spots.
1584.8	1585.8	Oil shale: tan to medium brown (2.5Y 6/3-4/3). Faint contorted streaks and stringers. Irregular thick parting; irregular to slightly conchoidal fracture. Very rare small irregular brown crystalline patches.
1585.8	1588.0	Oil shale: buff to medium brown and brownish gray (2.5Y 7/2-5/3 and 4/1). Moderately distinct to very faint, contorted and displaced to some slightly distorted laminations, stringers, and streaks. Irregular to slightly irregular thick parting; slightly conchoidal to some irregular fracture.
1588.0	1594.0	Oil shale: medium brownish gray and brown (2.5Y 5/2-5/3, some 4/2-4/1). Very faint to faint, distorted to some smooth streaks, stringers and laminations. Irregular to slightly irregular thick parting; conchoidal to some smooth fracture. A smooth vertical fracture with brown to black varnish-like coatings from 1593.0 to 1594.3 feet.

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from Equity Oil Company's Core BX-1--Continued

From	To	Description
1612.0	1617.6	Oil shale: dark and some medium brownish gray (10YR 3/2 and 3/1-2/2, some 4/2-4/1). Very faint to faint distorted laminations and streaked bedding. Regular to irregular thick parting; conchoidal to irregular fracture.
1617.6	1620.8	Oil shale: dark brownish gray and rare dark brown (10YR 3/2-2/2, some 3/1-2/1, rare 3/3). Very faint to faint, fairly smooth to distorted streaked bedding. Regular to irregular thick parting; conchoidal to slightly irregular fracture. Some very small irregular pyrite blebs and streaks in upper part. Rare small dark brown crystalline patches in lower part.
1620.8	1624.1	Oil shale: light to medium and rare dark brownish gray (2.5Y 6/2-5/2, some 5/1, rare 4/2-3/2, near top). Faint to very faint, slightly distorted to some contorted streaks, stringers, and rare laminations. Irregular thick parting; slightly irregular to conchoidal fracture. Some thin to fine, very irregular to lacy, brownish gray to black crystalline stringers. A smooth vertical fracture with irregular buff to white nahcolite crusts from 1621.8 feet to base. Sample of lean oil shale with fine black lacy stringers from 1621.6 feet: X-ray - quartz; some pyrite, dawsonite, feldspar (Na and K), dolomite, calcite. Sample of buff to white fracture crusts from 1623.1 to 1624.1 feet: X-ray - nahcolite.
1624.1	1642.8	Oil shale: buff and tan to medium brown and brownish gray (2.5Y 7/2 and 6/3-5/3 and 5/2, rare 4/2). Faint to some moderately distinct, slightly distorted to very distorted streaks, stringers and rare laminations. Irregular thick parting; slightly irregular to conchoidal fracture. Some small irregular (some angular) brownish gray to dark gray lenses, stringers and streaks. Some small irregular buff earthy to silty spots and streaks. A slightly irregular vertical fracture with brown varnish-like coatings and some buff to white, earthy to chalky crusts from 1632.7 to 1633.6 feet. Sharp wavy unconformable contact with darker shale below. Sample of small angular brownish gray crystalline lenses from 1634.5 feet: X-ray - dawsonite, some quartz, trace dolomite.

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from Equity Oil Company's Core EX-1---Continued

From	To	Description
1661.0	1662.0	Oil shale: medium to dark brown and brownish gray (2.5Y 4/3 and 4/2-3/3 and 3/2; some slight olive tint). Faint intricately contorted and overturned laminations. Very irregular parting and fracture. Common very thin irregular tan to brown crystalline stringers, streaks and lenses.
Footage remeasured from 1662.0 to 1688.0 feet.		
1662.0	1663.0	Oil shale: medium olive gray to brownish gray and some brown in upper 0.3 foot (5Y 4/2-5/2 and 2.5Y 4/2-4/3), dark brownish gray in lower part (2.5Y 3/2-2/2). Faint very distorted laminations near top to very faint distorted streaked bedding in lower part; some loop structures in upper part. Irregular thick parting; irregular to conchoidal fracture. Some to very common very fine disseminated crystals and crystalline streaks.
1663.0	1664.0	Oil shale: medium to dark brownish gray and brown (2.5Y 4/2 and 4/3-3/2 and 3/3, rare 2/2), some medium to dark olive gray (5Y 5/2-3/2). Faint very distorted streaks, stringers, and rare laminations. Irregular thick parting; irregular to conchoidal fracture. Common fine disseminated crystals and crystalline streaks; some thin tan to brown crystalline stringers and lenses.
1664.0	1664.9	Oil shale: medium brownish gray and olive gray (2.5Y and 5Y 5/2-4/2). Very faint distorted streaks and stringers. Irregular to slightly irregular, thick to medium parting; irregular to conchoidal fracture. Some fine crystalline streaks with common pyrite.
1664.9	1665.7	Oil shale: dark brownish gray to brownish black (2.5Y 3/2-1/2). Very faint slightly distorted streaked bedding and some laminations. Slightly irregular to irregular thick parting; irregular fracture. Some fine irregular pyrite blebs and streaks in upper part.
1665.7	1666.7	Oil shale: medium to dark brown and brownish gray (10YR 4/3-3/3 and 3/2, rare 2/2). Very faint slightly distorted streaked bedding. Irregular thick parting; irregular to conchoidal fracture. Common very small irregular tan to dark brown crystalline lenses and streaks.
		Sample of shale with very small tan to dark brown crystalline lenses and streaks from 1666.2 feet: X-ray - quartz; some dolomite, dawsonite, analcite, Na-feldspar.

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Core samples from Equity Oil Company's Core BX-1--Continued

From	To	Description
		faint smooth to slightly distorted laminations. Slightly irregular to very regular, thick to some thin shaly parting; slight to coarse hackly fracture. Common very fine crystalline laminae and streaks in upper and middle parts. Rare fine pyrite blebs, streaks and stringers in lower part.
		Sample of dark brownish gray oil shale with very fine crystalline laminae and streaks from 1674.0 feet:
		X-ray - quartz; some dolomite, analcite, feldspar (K and Na), illite.
1676.4	1677.5	Oil shale: dark and some medium brown to brownish black (10YR 3/3-1/2, some 4/3-4/4); some resinous to waxy luster. Faint to fairly distinct, irregular and distorted to some contorted laminations; common small to large irregular loop structures. Irregular thick parting; irregular hackly fracture. Very rare small dense dark brown cherty lenses.
1677.5	1679.5	Oil shale: dark brownish gray and some brownish black (10YR and 2.5Y 3/1 and 3/2-2/1 and 2/2, some 1/1-1/2); some satiny to rare waxy luster in upper part. Faint to very faint, distorted to smooth laminations. Regular to rare irregular, thick to thin shaly parting; hackly fracture. Common very fine crystalline streaks and laminae (like 1674.0 feet). Very rare fine pyrite streaks.
1679.5	1682.0	Oil shale: medium to dark brownish gray (10YR 3/2-2/2 and 2.5Y 4/2-3/2; some very slight olive tint); some satiny and very rare resinous luster. Very faint smooth laminations. Very regular to some irregular, thick to thin shaly and rare papery parting; slight to coarse hackly fracture. Upper part badly broken up and mixed up; true length doubtful.
1682.0	1683.5	Oil shale and marlstone: medium to dark brownish gray and rare tan to buff (2.5Y 5/2 and 5/1-3/2 and 3/1, rare 6/3-7/2; some slight olive tint). Very faint to moderately distinct smooth laminations. Regular to irregular, medium to thin parting (unctuous parting surfaces); irregular to very conchoidal fracture. Some gray laminae and streaks.
		Sample of very lean unctuous oil shale with gray laminae from 1682.5 feet:
		X-ray - quartz, dolomite, illite; trace analcite, feldspar.

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from Equity Oil Company's Core BX-1--Continued

From	To	Description
1696.0	1699.3	Oil shale: medium to dark brownish gray (2.5Y 4/2-3/2, some 2/2 in upper part). Very faint distorted streaked bedding. Irregular to rare regular, thick to medium parting; very irregular fracture. Rare small irregular dense cherty to fine crystalline lenses.
1699.3	1700.3	Oil shale: medium to dark brownish gray and some buff (2.5Y 5/2-3/2, some 6/2-7/2, rare 2/2); very rare satiny to waxy stringers. Distinct to faint distorted streaks, stringers and laminations; some very irregular small to fairly large loop structures. Irregular to slightly irregular thick parting; irregular and rare coarse hackly fracture.
1700.3	1703.6	Oil shale: dark brownish gray to brownish black (2.5Y 2/2-1/2, rare 3/2); some very slight satiny luster. <u>Very</u> faint very smooth to slightly distorted laminations. Very regular to rare irregular, medium to very thin shaly parting; hackly fracture. Very rare very fine pyrite streaks and lenses. Very rare very fine tan laminae. Sample of dark brownish gray to brownish black oil shale from 1701.9 feet: X-ray - illite, quartz; some feldspar (Na and K), dolomite, pyrite.
1703.6	1704.5	Mudstone: medium and rare dark brownish gray (2.5Y 4/2, rare 3/2). <u>Very</u> faint slightly distorted to smooth streaked bedding. Irregular parting and fracture. Some very small buff to brownish gray, silty to fine crystalline lenses. Very rare dark brown glassy lenses. Irregular interfingering contacts at top and bottom. Sample of mudstone with very small, fine crystalline to glassy lenses from 1704.3 feet: X-ray - quartz, dolomite; some analcite, feldspar, illite, pyrite.
1704.5	1708.0	Oil shale: dark brownish gray (2.5Y 3/2-2/2). Very faint slightly distorted to smooth laminations. Regular to some irregular, medium to thin shaly and rare papery parting; very hackly fracture. Very common fine crystalline streaks and laminae in upper and middle parts. Rare small dark brown to black glassy to cherty lenses and stringers. Very rare fine pyrite streaks. Sample of oil shale with small dense dark brown cherty lenses and stringers from 1705.0 feet: X-ray - quartz; some illite, dolomite, analcite, feldspar, pyrite.

Bottom of core.

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